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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,556	11/29/2001	Brian Jay Tillotson	7784-000378	5900

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EXAMINER

NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,556	TILLOTSON, BRIAN JAY	
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3, 5 and 11 are objected to because of the following informalities:

In claim 3 line 3, --a-- should be inserted before "carrier phase".

In claim 5 line 6, "synchronized" should be changed to --synchronize--.

In claim 11 line 6, "synchronizes" should be changed to --synchronize--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-7, 10-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,204,856 to Bebee et al.

Referring to claims 1 and 7, Bebee et al disclose in Figure 1 a method for reducing a required signal-to-noise ratio in a time division multiple access (TDMA) link of a mobile network, the network including a first node (node C) and a second node (node A). Refer to Column 3, lines 7-9; Column 9, lines 54-60; and Column 10, lines 36-42. As shown in Figure 3, the method comprises:

Receiving at the first node (node C), in an initial TDMA time slot (T2: A TO C during start-up), an initial TDMA signal burst (frame 54) from the second node (node A),

the initial TDMA signal burst comprising a single first preamble (long 2-second preamble in traffic slot of frame 54). Refer to Column 4, lines 8-14 and lines 25-36.

Determining initial link state variables (frequencies and time-of-arrival TOA) of a link between the first and second nodes by utilizing a first preamble (long 2-second preamble in traffic slot of frame 54) included in the initial TDMA signal burst (frame 54), thereby synchronizing the first node to the initial TDMA signal burst. During start-up, node A sends node C a frame 54 with a long preamble to notify node C of what default frequency to use and to measure a TOA. Refer to Column 4, lines 8-14 and lines 25-36; and Column 12, lines 45-52. Also, preambles provide synchronization. Refer to Column 3, lines 25-31.

Receiving at the first node (node C), in a subsequent TDMA time slot (T2: A TO C after link-up), a second TDMA signal (frame 56) burst from the second node (node A), the second TDMA signal burst comprising a single second preamble (short 0.5-second preamble in traffic slot of frame 56) that is shorter than the first preamble of the initial TDMA signal burst in the initial TDMA time slot. After start-up, node A sends node C a frame 56 with a short preamble. The short preamble provides updates as to which frequency to use to provide a better signal-to-noise ratio. Refer to Column 5, lines 5-18; Column 10, lines 4-26 and lines 36-42; and Column 12, lines 45-52.

Updating the initial link state variables utilizing the second preamble (short 0.5-second preamble in traffic slot of frame 56). Refer to Column 5, lines 5-18; Column 10, lines 4-26 and lines 36-42; and Column 12, lines 45-52.

Referring to claims 4 and 10, Bebee et al disclose that updating the link state variables (frequencies) comprises storing the initial link state variables in a database (Figure 8, receive signal measurement storage 108) of the first node. Refer to Column 10, line 66 to Column 11, line 8.

Referring to claims 5 and 11, Bebee et al disclose wherein updating the link state variables further comprises:

Fetching the stored initial link state variables from the database (Figure 8, receive signal measurement storage 108). Refer to Column 10, line 66 to Column 11, line 41.

Utilizing the stored initial link state variables as a starting point for synchronizing to the second preamble (short 0.5-second preamble in traffic slot of frame 56). The receive signal measurement storage 108 stores signal information which is used by the P&T protocol 100 to determine which frequencies should be used for data transmission and reception. Refer to Column 10, line 66 to Column 11, line 41. Also, preambles provide synchronization. Refer to Column 3, lines 25-31.

Adjusting the link state variables to synchronize to the second preamble (short 0.5-second preamble in traffic slot of frame 56), thereby synchronizing the first node to the second TDMA signal burst. The short preamble in frame 56 provides updates as to which frequency to use to provide a better signal-to-noise ratio. Refer to Column 5, lines 5-18; Column 10, lines 4-26 and lines 36-42; and Column 12, lines 45-52. Also, preambles provide synchronization. Refer to Column 3, lines 25-31.

Referring to claims 6 and 12, Bebee et al disclose that wherein updating the links state variables further comprises storing the updated link state variables in the database (Figure 8, receive signal measurement storage 108). P&T protocol 100 uses the information to receive signal measurement storage 108 to determine what frequencies to use for data transmission or reception. Refer to Column 10, line 66 to Column 11, line 41.

Referring to claim 13, refer to the rejection of claims 1 and 7; claims 4 and 10; and claims 6 and 12.

Referring to claim 15, refer to the rejection of claims 5 and 11.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 9 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,204,856 to Bebee et al in view of U.S. Patent No. 6,084,852 to Ebringer.

Bebee et al do not disclose that determining link state variables comprises utilizing the first preamble to determine at least one of a frequency offset from a nominal frequency, carrier phase, a symbol phase, and a word phase.

Ebringer discloses in Figure 4 that burst mode transmitters transmit a preamble prior to the transmission of data so that a burst mode receiver can obtain the correct

clock sample phase and carrier phase to recover the data. The preamble also the carrier frequency, symbol clock frequency and symbol clock phase. Refer to Column 1, lines 10-18; Column 2, lines 43-52; and Column 4, lines 31-37. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that determining link state variables comprises utilizing the first preamble to determine at least one of a frequency offset from a nominal frequency, carrier phase, a symbol phase, and a word phase; the motivation being so that the receiver can detect the presence of a burst of data and correctly recover the symbols transmitted.

Response to Arguments

6. Applicant's arguments filed November 17, 2005 have been fully considered but they are not persuasive.

Referring to the argument of independent claims 1, 7 and 13 that Bebee et al do not disclose that the initial TDMA signal burst comprises *a single first preamble* (page 8, lines 3-16), refer to Bebee et al, Figure 3. The claimed *single first preamble* reads on the long 2-second preamble in the traffic slot of frame 54 since it is the first preamble of the 5-second frame. Refer to Column 4, lines 5-24.

Referring to the argument of independent claims 1, 7 and 13 that Bebee et al do not deal purely with local link state variables that are used at the receiving end of a link (page 8, lines 17-24), the claims do not disclose this limitation. Even though Bebee et al makes changes at the transmit end of a link and sends information about a probe frequency back to other nodes instead of dealing with local link state variables used at the receiving end of a link, Bebee et al still discloses the limitations of the claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng 
January 25, 2006


RICKY Q. NGO
SUPERVISORY PATENT EXAMINER